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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Thierry Georges

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466

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209 Madison Street

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EXAMINER

CARTER, MICHAEL W

ART UNIT

PAPER NUMBER

2828

MAIL DATE

DELIVERY MODE

12/17/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/575,163	Applicant(s) GEORGES, THIERRY	
	Examiner MICHAEL CARTER	Art Unit 2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 11 and 13-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11 and 13-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Remarks

1. **Claims 10 and 12** are cancelled.

Claim Rejections - 35 USC § 112

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. **Claims 19** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
4. **Claim 19** recites limitations directed to “the isotropic crystal.” “The isotropic crystal” lacks strict antecedent basis and it is unclear whether the applicant is referring to “an isotropic medium” recited in claim 17, or if the applicant is intending to limit the claim to an isotropic medium which is a crystal. For purposes of the art rejection below, it is assumed that the applicant intends to limit the isotropic medium to a crystal in claims 19.

Claim Rejections - 35 USC § 103

5. **Claims 1 and 5-9** remain rejected under 35 U.S.C. 103(a) as being unpatentable over Shichijyo et al. US patent 5,809,048 (hereinafter referred to as Shichijyo) in view of Nettleton et al. US Patent 6,373,865 (hereinafter referred to as Nettleton), and further in view of Dixon et al. US Patent 4,884,276 (hereinafter referred to as Dixon) according to the first office action.

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6. **Claim 1** is rejected according to the arguments for claims 1 and 12 in the previous rejection. As the applicant points out in the final paragraph of page 14 and the first paragraph on page 15 of the remarks, the cited art does not teach the refractive index is within 10% of the refractive index of the birefringent crystal. However, there are many well known amplifying media and frequency doubling crystals that are well known in the art and have indices of refraction which meet the claim limitation. One would be motivated to choose alternative amplifying media or doubling crystals based on either desired wavelengths or availability of materials. One example of an alternative amplifying medium is ND:GGG which has an index of refraction $n=1.94$ which does fall within 10% of the birefringent crystal KNbO_3 (See Nilsson, US Patent 5,043,996 column 6, line 20). An example of a birefringent doubling crystal which would meet the limitation with ND:YAG as the amplifying medium is LiIO_3 which has indices of refraction 1.895 and 1.753 (See for example Grossman, US Patent 5,850,407, column 4, line 11).

7. **For claims 5-9**, the prior art is applied according to the previous office action.

8. **Claims 2-4, and 14-16** remain rejected under 35 U.S.C. 103(a) as being unpatentable over Shichijyo in view of Nettleton, and Dixon as applied to claim 1 above, and further in view of Bacher et al. US Patent 7,065,109 (hereinafter referred to as Bacher) according to the previous office action.

9. **Claim 13** is rejected under 35 U.S.C. 103(a) as being unpatentable over Shichijyo in view of Nettleton and Dixon and further in view of Okazaki et al. us Patent 5,588,014 (hereinafter referred to as Okazaki).

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10. **For claim 13**, the combination of Shichijyo, Nettleton and Dixon teach the device of claim 13 according to the arguments for claims 1-3 above. The combination does not teach the method comprising the steps of: varying an optical path length covered by the laser beam by translating the laser beam emitted by the pumping means with respect to the input face of the amplifying medium, the laser beam being moved along a plane, wherein a distance in the plane covered by the laser beam in the amplifying medium varies as a function of a latitude of a passage in the amplifying medium; and varying a length of the birefringent crystal by translation of the pumping means.

11. However, Okazaki does teach the method of claim 13 comprising the steps of: varying an optical path length covered by the laser beam by translating the laser beam emitted by the pumping means with respect to the input face of the amplifying medium (figure 25), the laser beam being moved along a plane, wherein a distance in the plane covered by the laser beam in the amplifying medium (label 16) varies as a function of a latitude of a passage in the amplifying medium; and varying a length of the birefringent crystal (label 10) by translation of the pumping means used in a similar second harmonic generating device in order to obtain the maximum output power.

12. It would have been obvious to one of ordinary skill in the art to apply the known method of Okazaki to the known device taught by the combination in order to obtain maximum output power.

13. **Claims 17, 19-20** remain rejected under 35 U.S.C. 103(a) as being unpatentable over Shichijyo in view of Nettleton and further in view of Dixon.

14. **Claim 17** is rejected according to the argument made for claim 1 above.

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15. **For claims 19 and 20**, the art is further applied according to the previous office action.

Allowable Subject Matter

16. **Claim 11 and 18** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

17. Applicant's arguments filed 10/01/2008 have been fully considered and have been addressed above or are moot in view of the rejection above.

Conclusion

18. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

19. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Carter whose telephone number is (571) 270-

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1872. The examiner can normally be reached on Monday-Friday, 7:00 a.m.-4:30 p.m., EST.

21. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MinSun Harvey can be reached on (571) 272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

22. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MC/

/Minsun Harvey/

Supervisory Patent Examiner, Art Unit 2828